CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2002-0013

ADOPTION OF SITE CLEANUP REQUIREMENTS AND RESCISSION OF ORDER NO. 99-103 FOR:

CHEVRON PRODUCTS COMPANY
EQUILON ENTERPRISES LLC
FUELING MAINTENANCE CO.
OAKLAND FUEL FACILITIES CORPORATION
PORT OF OAKLAND
PS TRADING, INC.
SHELL OIL COMPANY
SWISSPORT FUELING, INC.

for the property located at

#1 EDWARD WHITE WAY
OAKLAND
ALAMEDA COUNTY

also known as

SOUTH FIELD TANK FARM
METROPOLITAN OAKLAND INTERNATIONAL AIRPORT

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. **Site Description and Location**: The South Field Tank Farm (SFTF) consists of three separate jet fuel storage and distribution terminals and is located along the southeastern edge of the Metropolitan Oakland International Airport (Figures 1 and 2). The three terminals are referred to as Tank Farm S (Shell), Tank Farm C (Chevron) and the Humble/PS Trading Tank Farm. Each terminal is bordered by diked stormwater retention basins on at least two sides. Parts of the basins at SFTF also qualify as jurisdictional, non-tidal wetlands under Section 404 of the Clean Water Act. Figure 2 shows the approximate relationship between the three terminals, the retention basins, and the San Francisco Bay.

   The San Francisco Bay is adjacent to the main dike that runs along the southern edge of the SFTF. Several companies operate petroleum pipelines between the southern edge of the SFTF and the Bay. These pipelines are above grade between the Southern Pacific pipeline facility, located immediately south of Tank Farm C and the southwest corner of Tank Farm S at Neil Armstrong Way. Several of the lines turn north and head into the

SFTF below grade at this location. One of these is a 10-inch line that carries gasoline known as the Bay Crossing Line.

2. **Regional Board Orders.** The Board adopted Site Cleanup Requirements (Order No. 99-103) for Tank Farm S on November 30, 1999. Order No. 99-103 set forth a task and time schedule for the Port of Oakland and Equilon Enterprises LLC to conduct source identification, a self-monitoring program workplan, an interim remedial action workplan, completion of interim remedial actions, and proposed final remedial actions and cleanup standards for an oxygenated gasoline hydrocarbon plume from a buried pipeline in Tank Farm S. The Port and Equilon have complied with the tasks required by Order No. 99-103.

3. **Purpose of this Order**: This Order requires further investigation, monitoring, and if necessary, remediation of soil and groundwater impacted by historic fuel releases in Tank Farm S, Tank Farm C, and the Humble/PS Trading Tank Farm.

4. **Named Dischargers**: During the period of time that the Port of Oakland has owned the property, several documented releases of fuel have occurred in the vicinity of Tank Farm S, Tank Farm C, and the Humble/PS Trading Tank Farm. The following named parties are collectively referred to as the Dischargers:

    - Chevron Products Company (Chevron) is named as a Discharger because it leased Tank Farm C from the Port of Oakland and owned and operated the facilities at this tank farm between 1970 and 1983. Petroleum hydrocarbons have been detected in soil and groundwater beneath Tank Farm C.
    - Equilon Enterprises, LLC (Equilon) is named as a Discharger because it has owned the Bay Crossing Line since 1998 and has acknowledged that a portion of the line appears to be the source of a release of oxygenated gasoline to soil and groundwater within Tank Farm S.
    - Fueling Maintenance Company (FMC) is named as a Discharger because it was a general partnership that operated Tank Farms C and S between approximately 1983 and 1989 including a period between December 1983 and September 1984 when two spills of jet fuel totaling approximately 39,000 gallons occurred at Tank Farm S. Additionally, FMC operated the Humble/PS Trading Tank Farm when an unknown quantity of fuel was released into the tank farm and retention basin in 1982. The individual partners who comprise this company have not been located. In the event that any successor(s) to FMC are found, they will be included in this order at a later date.
    - Oakland Fuel Facilities Corporation (OFFC) is named as a Discharger because it has operated and maintained the fuel terminal facilities at the SFTF since mid-1989 through an agreement with the Port of Oakland. Two spills of oil/water separator liquid and jet fuel totaling approximately 2,300 to 3,300 gallons were reported in Tank Farm S in 1990 and 1991.
    - PS Trading is named as a Discharger because it and its predecessor installed, owned, and/or operated the Humble/PS Trading tank farm from approximately

1970 to 2001. An unknown quantity of fuel was released into the tank farm and wetlands in 1981.

- The Port of Oakland (Port) is named as a Discharger because it was the owner of the SFTF property when the discharges occurred, oversaw the FMC contract, and is currently the owner of the SFTF property, including Tank Farm S, Tank Farm C, and the PS Trading Tank Farm.
- Shell Oil Company (Shell) is named as a Discharger because it was the operator of Tank Farm S in July 1974 when a spill of between 100,800 and 300,000 gallons of Jet A fuel occurred. Additionally, Shell was the operator of the Bay Crossing Line between 1967 and 1997 when MTBE contamination at the SFTF was first discovered. Due to the large volume of Jet A fuel spilled in July 1974, it is likely that this event contributed to the residual separate phase product and groundwater contamination found in the vicinity of Tank Farm S.
- Swissport Fueling, Inc. (Swissport) is named as a Discharger because it is currently the third party service provider under contract with OFFC, currently operates Tank Farm S and the hydrant fueling system, and is the corporate successor to Dynair Fueling, Inc. who was the third party service provider to OFFC prior to 2000.

If additional information is submitted indicating that other parties caused or permitted any contaminants to be discharged at the SFTF where they contaminated, or could have contaminated soil, groundwater, or surface water, the Board will consider amending this Order to add additional parties.

Site History

5. **Tank Farm S**. Tank Farm S is currently in operation and contains four vertical Jet A fuel aboveground storage tanks with a combined storage capacity of 2.94 million gallons. Swissport operates this tank farm on behalf of OFFC, which has entered into an agreement with the Port of Oakland to operate and maintain the fuel terminal facilities at the SFTF. The four aboveground jet fuel tanks have the following capacities: Tank No. 250 – 420,000 gallons; Tank No. 251 – 420,000 gallons; Tank No. 252 – 1,050,000 gallons; and Tank No 253 – 1,050,000 gallons. Piping integral to the tanks is located within the boundaries of Tank Farm S and terminates at the Outlet Filter area. Tank Farm S also includes a meter proving rack, a 1,000 gallon double walled aboveground tank which stores diesel for use in an emergency generator, an inlet filter area with 1,600 gallon and 4,000 gallon cathodically protected underground steel sumps, an outlet filter area with a 1,000 gallon cathodically protected underground steel sump, and a former outlet filter area.

6. **Construction and Integrity Testing of Tank Farm S.** Hydraulic fill was placed in the Tank Farm S area between 1957 and 1961 after construction of a perimeter dike. The site was graded in preparation for engineered fill in 1966, including the excavation of some of the previously placed hydraulic fill. The preconstruction site elevation ranged between zero and –6 feet (Port of Oakland datum). The site was filled with approximately ten to 14 feet of engineered fill, with an additional two feet of fill placed for aboveground tank

foundation pads. The tanks in Tank Farm S are welded field-constructed steel tanks. The tank farm was constructed in two phases. Tanks 250 and 251 were installed in 1967, and Tanks 252 and 253 were installed in 1970. The interior bottom surface and four to six feet of the interior walls of the four tanks were epoxy-coated soon after installation. The tank bottoms are cathodically protected and sit directly on compacted soil foundations, but do not have any leak detection system. Since their operation by OFFC, the tank interiors have been visually inspected annually, and their exteriors inspected daily. The tanks in Tank Farm S have never been internally tested for integrity, nor is there corrosion data from other tanks of the same age, size, construction, use and location that could provide similar service information or justify a deviation from the ten year internal inspection protocol of the industry standard (American Petroleum Institute [API] Standard 653).

7. **Secondary Containment at Tank Farm S.** The secondary containment is comprised of cinderblock walls and an earthen floor. All four tanks are enclosed by a common free-standing, irregularly-shaped rebar-reinforced cinderblock wall and each tank is separated by 18-inch intermediate walls for localized spill control. A release from Tank 250 in 1974 seeped through the earthen floor and the cinderblock wall to the nearby retention pond. Therefore, the secondary containment for Tank Farm S is not sufficiently impervious to prevent a release of petroleum from reaching waters of the State. An in-progress engineering study will address the necessary upgrades to the secondary containment area. Currently, surface water runoff within the secondary containment area is collected in four subsurface drains and is contained, treated, and discharged to the local storm water system.

8. **Bay Crossing Line at Tank Farm S.** The Bay Crossing Line is one of seven pipelines in the vicinity of Tank Farm S. The Bay Crossing Line is a 10-inch pipeline that carries gasoline to an Equilon terminal near the San Francisco Airport. The line runs along the swale located to the southeast of the SFTF, then continues inside the Tank Farm S fence parallel to Neil Armstrong Way, and "loops" on the Tank Farm S grounds. Within this loop area, an anti-corrosion inhibiter is added to the pipeline, within separate Shell/Equilon-controlled facilities of approximately 3,000 square feet (Loop Area), before the pipeline turns down Neil Armstrong Way and then to the dike to complete its crossing under San Francisco Bay.

9. **Tank Farm C**. Tank Farm C contains three out-of-service welded field constructed steel aboveground storage tanks which were constructed in 1969 by Standard Oil Company, the predecessor to Chevron. This site was leased by the Port to Standard Oil Company from 1970 through 1983, at which time the facilities were sold to the Port. The tank farm was last used in approximately 1989. The three tanks have the following capacities: Tank No. 1 - 630,000 gallons, Tank No. 2 - 126,000 gallons; and Tank No. 3 – 252,000 gallons. The Tank Farm C area also contains a 1,000 gallon underground waste sump immediately south of the Tank Farm C secondary containment area. Due to the length of time the facility has been out of service and damage from the 1989 earthquake, if Tank Farm C is placed back into service in the future, upgrades will be required to bring the facility into compliance with aboveground tank laws and regulations.

10. **Humble/PS Trading Tank Farm**. Until November 2001 when the tanks and associated appurtenances were removed, the Humble/PS Trading Tank Farm contained two out-of-service welded field constructed steel aboveground storage tanks. The tanks were constructed in 1969 and were operational until 1991. The Port leased this site to the Humble Oil & Refinery Company in about 1970. Thereafter, Exxon Corporation took over the lease, and in 1980 Exxon assigned the lease to Pacific Southwest Airlines, a predecessor of PS Trading. Tank T-20 had a capacity of 300,000 gallons and Tank T-21 had a capacity of 600,000 gallons. The tanks were inside a secondary containment area. In mid-1998, an internal and external inspection following API Standard 653 was conducted on these tanks which identified various deficiencies of the tank system including pitting and corrosion on the tank bottoms.

11. **Site Hydrogeology**:

    Site Filling. The SFTF is located in an area that was part of the Bay until between 1957 and 1961 when a perimeter dike was constructed and filled. This perimeter dike surrounds the entire airport and prevents the Bay from inundating the area during high tide. The initial hydraulic fill was placed using sand and silt pumped in from an offshore location approximately one-half mile north of the Oakland airport. The fill material for major structure foundations, roadways, and the airport runways was brought in and placed as dry aggregate base (i.e., engineered and compacted). The thickness of the fill material underlying the three tank farms varies from approximately five to slightly greater than ten feet. Native clay with interbedded sand zones is present beneath the engineered fill and hydro-fill. The Yerba Buena Mud beneath the native clay forms a major aquitard between the shallow and deep aquifers in the study area.

    Groundwater Occurrence. Shallow groundwater is present within the engineered fill material and occurs as a perched water zone within the relatively permeable fill material above the lower permeability native clay. Groundwater typically exists within the fill at depths ranging from two to seven feet below ground surface. Groundwater flow direction in this shallow perched zone is difficult to predict due to the engineered fill and underground pipelines in the area. The groundwater appears to flow from the elevated engineered fill towards the retention basins around the site which represent the ground surface elevation following initial fill placement. During the summer and fall months, the retention basin area is dry. During the winter months, rainfall inundates the surface water retention basin within the diked area adjacent to the SFTF. A drainage channel which runs along the inside of the dike directs surface water within the diked area to Pump House #4 which is located approximately 200 yards to the west of the SFTF. From there the water is pumped over the dike and into the Bay.

    Groundwater Monitoring. Groundwater monitoring wells MW-1 through MW-9 (with the exception of MW-6), MW-11 through MW-13, MW-15, and E-1 typically monitor the water levels in the perched water zone within the engineered fill. Groundwater in the underlying hydraulic fill and/or the native material is monitored in wells E-1, E-2, and E-3. Groundwater elevations in the perimeter dike are monitored in wells MW-6, E-4, and E-5. The groundwater elevation within the core of the dike is several feet higher than that observed at the tank farm. The total dissolved solids at well E-2 ranged between

2,500 mg/L and 3,800 mg/L during an eight-hour study of tidal influences. The data variations did not correlate with tidal fluctuations. Some wells at the site do exhibit groundwater elevation fluctuations that correlate to tidal fluctuations. The magnitude of fluctuation is approximately 0.2 feet in the wells and approximately six feet in the Bay.

12. **Groundwater Quality.** Shallow groundwater in the vicinity of the South Field Tank Farm is brackish to saline and it generally exceeds 3,000 mg/l total dissolved solids (TDS). Therefore, shallow groundwater is not reasonably expected by the Board to supply a public water supply system and therefore meets the exemption criteria of the State Water Resources Control Board's Sources of Drinking Water Policy (SWRCB Resolution 88-63). The deeper aquifers beneath the site contain fresh water that has historically been used as a source of drinking water.

13. **Spill Summary**: During the operational history of the SFTF, a number of documented releases have occurred, primarily in Tank Farm S.

Date	Tank Farm	Operator	Description
July 12, 1974	S	Shell	•Between 100,800 and 300,000 gallons of jet A are estimated to have been released in vicinity of Tank 250 based on reports and photographic evidence •fuel was observed leaking through the containment wall and into recovery ditches dug along the outside of the wall •84,000 gallons estimated to have been recovered from behind wall, 16,800 gallons recovered from outside wall
March 30, 1981	Humble/PST	FMC	•unknown quantity of jet fuel lost after ruptured diaphragm switch allowed fuel to be released •fuel soaked through containment berm into ditch and wetlands •unknown quantity of fuel and water recovered by vacuum truck.
June 23, 1982	unknown Location	Unknown	•unknown quantity of jet fuel lost after ruptured diaphragm switch allowed fuel to be released within the manifold/fuel filtering containment area and drained into the ditch which carries water to the west.
December 9, 1981	S	FMC/Shell	•1443 gallon jet fuel spill due to overflow from truck tank into retention pond. •Fuel also observed in larger pond and drainage ditch on northeast corner of pond.

Date	Tank Farm	Operator	Description
December 7, 1983	S	FMC	•unknown quantity of jet fuel lost •19,876 gallons total liquid recovery by vacuum truck from retention pond •amount of JP-5 jet fuel in this recovery volume was not reported
September 4, 1984	S	FMC	•18,774 gallons of jet A estimated to have overflowed from Tank 253 due to delivery to wrong tank •8,000 gallons recovered from retention pond •Coast Guard observed fuel in wetlands
November 30, 1990	S	Swissport (Dynair) Fueling, Inc.	•estimated 2,000 – 3,000 gallon jet fuel release in filter bank area due to oil/water separator overflow •area impacted by release and amount recovered not reported
October 28, 1991	S	Swissport (Dynair) Fueling, Inc.	•reported 300 gallons jet fuel leaked from top vents of Tank 250 due to overfilling •area impacted by release and amount recovered not reported
Discovered prior to December 1997	S	Equilon (Shell)	•total petroleum hydrocarbons as gasoline (TPH-g), benzene, toluene, ethylbenzene and xylenes (BTEX), and methyl-tertiary butyl ether (MTBE) were identified in soil and groundwater in the vicinity of the "loop" area of the Bay Crossing Line. A specific oxygenated gasoline release event has not been identified.

REMEDIAL INVESTIGATION OVERVIEW

14. **Remedial Investigations at South Field Tank Farm.** The Port submitted a soil and groundwater investigation report for the South Field Tank Farm dated November 16, 1998 which summarized previous investigations. This report indicated that jet fuel releases had occurred at Tank Farm S, Tank Farm C, and the Humble/PS Trading Tank Farm. Shell Oil Company submitted a soil and groundwater investigation report for the Tank Farm S area dated November 22, 2000 and a supplemental letter dated February 15, 2001 which presented the results for soil and groundwater samples collected at the facility in July and August 2000 documenting the presence of TPH as jet fuel (TPH-jet fuel) in soil and groundwater. On July 26, 2001, Equilon submitted a soil and groundwater investigation report presenting the results of investigations conducted to define the extent of the oxygenated gasoline plume in the vicinity and downgradient of the Bay Crossing Line "loop area" on Tank Farm S. An Interim Remedial Action Plan for the oxygenated gasoline plume was submitted by Equilon on October 19, 2001. The

Port submitted a data report dated July 23, 2001, summarizing all historical soil and groundwater analytical data associated with jet fuel releases at Tank Farm S.

OFFC submitted a Final Site Characterization Plan for Tank Farm S on August 28, 2001, which was based upon the Port's data report. The Dischargers have proposed to submit the results of this investigation by December 17, 2001. PS Trading submitted a workplan dated August 13, 2001 to assess whether or not a release may have resulted from the storage of petroleum in the two aboveground storage tanks and associated lines at the PS Trading Tank Farm. The results of this investigation were expected to be submitted by December 14, 2001. The expected December 17, 2001 and December 14, 2001 submittals were delayed due to site access limitations due to security concerns in the vicinity of the tank farms and will be submitted as Tasks B.1 and B.13 of this Order.

15. **Tank Farm S**

Soil. One hundred and sixty-nine soil samples have been collected from 96 soil borings and 16 groundwater monitoring wells in the vicinity of Tank Farm S. All soil samples were analyzed for TPH-jet A and a smaller subset of samples were analyzed for TPH-g, BTEX, MTBE, and polyaromatic hydrocarbons (PAHs). Elevated concentrations of TPH-jet A are present in soils beneath the secondary containment area for the aboveground tanks with the highest concentration downgradient of the secondary containment area (9,840 mg/kg, boring GP-24). Oxygenated gasoline constituents were not detected in soils within the secondary containment area. The highest concentrations of TPH-g, BTEX, and MTBE were identified in the vicinity of the Loop Area (maxima of 20,000 mg/kg TPH-g and 120 mg/kg MTBE in GP-2; and 23 mg/kg benzene, 580 mg/kg toluene, 120 mg/kg ethylbenzene, and 650 mg/kg xylenes in GP-6).

Groundwater. Eighty-three groundwater samples have been collected from 59 soil borings and 16 groundwater monitoring wells. The monitoring wells were completed between approximately one and 20 feet below the ground surface. The screened intervals of wells MW-1, MW-2, MW-5, MW-7, MW-8, MW-9, and MW-15 were submerged below the water table when they were installed. Water level measurements and analyses for TPH-jet A, TPH-g, BTEX, and MTBE have been conducted irregularly on the groundwater monitoring wells since July 1998. In addition, a limited number of groundwater samples have been analyzed for PAHs and total dissolved solids (TDS).

A free product sheen and dissolved phase product are present in areas beneath and downgradient of Tank Farm S. The table below lists the maximum concentrations of dissolved petroleum hydrocarbons detected in wells in Tank Farm S:

Free Product Thickness	Sheen
TPH-jet A	1,100,000 ug/l
TPH-g	8,500 ug/l
MTBE:	110,000 ug/l
Benzene:	2,000 ug/l
Toluene:	750 ug/l

Ethylbenzene.: 72 ug/l
Xylenes: 218 ug/l

The highest concentrations of dissolved TPH-jet A have been detected in wells west and southwest of the aboveground storage tanks. The TPH-jet A plume extends from the aboveground tanks to the retention basin and wetland area southwest of Neil Armstrong Way, south of the unpaved dike roadway (Figure 3). The highest concentrations of dissolved TPH-g (Figure 4), BTEX (Figure 5, benzene), and MTBE (Figure 6) are in the vicinity of the Loop Area. This oxygenated gasoline plume overlaps the TPH-jet A plume and similarly extends into the retention basin and wetland area southwest of Neil Armstrong Way. The oxygenated gasoline plume also extends towards an adjacent retention basin and wetland area located north of the unpaved dike roadway.

The extent of the dissolved phase plumes has not been determined. There is presently inadequate data to determine whether the free and dissolved phase plumes are migrating, stable, or receding. Further site characterization work has been undertaken and is expected to be presented in the report required by Task 1 of this Order.

Tank Farm S Retention Pond. Between the late 1960's and March 1998, an unlined retention pond adjacent to the southwest side of Tank Farm S served as additional secondary containment for stormwater. This pond is separated from a surface water retention basin by an earthen dike which historically contained three open culverts that allowed the contents of the pond to flow into the surface water retention basin. Stormwater or spilled product contained within the concrete containment walls of Tank Farm S was allowed to collect in four small underground sumps connected to the retention pond by a central underground pipeline.

- Surface Water and Soil Contamination: In February 1998, Board staff collected surface water samples from the retention pond noting a strong petroleum odor and a sheen on the surface of the retention pond as well as distinct globules of an oily substance in the sample. The Board's contract lab reported 5,900 mg/l TPH as diesel (TPH-d) and 72 mg/l TPH-g. Shallow soil samples taken in the retention pond bottom in July 1998 contained up to 6,200 mg/kg TPH-jet A (boring B-23).

- Remedial Measures: At Board staff's request, the Port plugged the three culvert outlets to the retention pond in March 1998. Since December 1999, the facility has been operating an on-site carbon adsorption based treatment system to treat storm water from the Tank Farm S secondary containment area and process water (tank draw-off water, wash water, etc.) generated during routine fuel terminal operations. After on-site treatment, the effluent is discharged to East Bay Municipal Utility District's (EBMUD's) sanitary sewer system. Requirements for further investigation and cleanup of petroleum-impacted soil in the retention pond are included in this Order.

16. **Tank Farm C.** Soil and groundwater samples have been collected from 12 soil borings and three groundwater monitoring wells in the vicinity of Tank Farm C. The

groundwater monitoring wells were completed between approximately five and 15 feet below the ground surface. The screened intervals of wells MW-11 and MW-12 were submerged below the water table when they were installed. Water level measurements have been conducted irregularly on these wells since July 1998. The depth to groundwater has ranged from 1.65 to 4.45 feet below the ground surface. Soil and groundwater samples were collected from soil borings and monitoring wells between 1996 and 1998 and analyzed for TPH-g, TPH-jet A, BTEX, and MTBE. TPH-jet A was detected at up to 2,700 mg/kg in soil and up to 33,000 ug/l in groundwater. The lateral and vertical extent of impacted soil and groundwater has not been defined in the vicinity of Tank Farm C. OFFC included the three wells at Tank Farm C in the third quarter 2001 groundwater monitoring and sampling event. Results are not yet available.

17. **Humble/PS Trading Tank Farm.** Soil and groundwater samples have been collected from 11 soil borings and one groundwater monitoring well in the vicinity of the Humble/PS Trading Tank Farm. The groundwater monitoring well (MW-14) was completed between approximately 6.5 and 16.5 feet below the ground surface. In July 1998, depth to groundwater was 5.6 feet below the ground surface. Soil and groundwater samples were collected from soil borings and monitoring wells between 1996 and 1998 and analyzed for TPH-g, TPH-jet A, BTEX, and MTBE. TPH-jet A was detected at up to 1,600 mg/kg in soil and up to 1,000 ug/l in groundwater. Monitoring well MW-14 could not be located in September 2001. The lateral and vertical extent of impacted soil and groundwater has not been defined in the vicinity of the Humble/PS Trading Tank Farm. PS Trading began demolition of the tank farm in November 2001. The results of an environmental investigation performed as part of the demolition will be presented in the report required by Task B.13 of this Order.

POLICIES

18. **Basin Plan**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

    The existing and potential beneficial uses of groundwater underlying and adjacent to the site include:

    a. Municipal and domestic water supply
    b. Industrial process water supply
    c. Industrial service water supply
    d. Agricultural water supply
    e. Freshwater replenishment to surface waters

The site is located within the East Bay Plain Groundwater Basin. Shallow groundwater beneath the facility is brackish to saline and there is no historical, current or planned use of the shallow groundwater in the vicinity of the SFTF as a source of drinking water. However, shallow groundwater and water from Pump House #4 discharges to a stormwater retention basin and then to San Francisco Bay.

The deeper aquifers beneath the site contain fresh water that has historically been used as a source of drinking water. EBMUD is in the final planning stages of a major 15 million gallons per day water supply well field (known as the Bayside Well Field) located about three miles south of the Oakland Airport. The cone of influence from the EBMUD well field is modeled to result in a drawdown in deep aquifer water levels beneath the SFTF by about 90 feet (EBMUD Bayside Well Groundwater Project, Draft EIR, 2001).

Only the shallow (water table aquifer) groundwater has been investigated at the SFTF. The maximum depth of soil borings is 21.5 feet below ground surface. The Discharger has not provided information on the thickness and integrity of the Bay Mud aquitard beneath the water table aquifer, or determined whether petroleum fuel components have impacted or could potentially impact groundwater in the deeper aquifers.

The existing and potential beneficial uses of San Francisco Bay include:

a. Water contact and non-contact recreation
b. Wildlife habitat
c. Cold freshwater and warm freshwater habitat
d. Fish migration and spawning
e. Navigation
f. Estuarine habitat
g. Shellfish harvesting
h. Preservation of rare and endangered species

19. **Other Board Policies**: Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

20. **State Water Board Policies**: State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. Given the Board's past experience with groundwater pollution cases of this type, it is unlikely that background levels of water quality can be restored. This initial conclusion will be verified when a cleanup plan is prepared. This order and its requirements are consistent with Resolution No. 68-16.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

21. **Preliminary Cleanup Goals**: The Dischargers (as appropriate) shall make assumptions about future cleanup standards for soil and groundwater, in order to determine the necessary extent of remedial investigation, interim remedial actions, and the draft cleanup plan. Pending the establishment of site-specific cleanup standards, preliminary soil and groundwater screening levels shall be selected in accordance with the following:

    a. Groundwater: Published water quality screening levels that comprehensively address environmental concerns applicable to the site, that may include, but not necessarily be limited to, drinking water impacts (e.g., maximum contaminant levels, or MCLs), aquatic biota impacts (e.g., surface water standards and goals), indoor air impacts, and nuisance concerns. The exclusion of specific environmental concerns from consideration (e.g., threat to drinking water resources) must be clearly documented.

    b. Soil: Published soil quality screening levels that comprehensively address environmental concerns applicable to the site, that may include, but not necessarily be limited to. human health direct-contact concerns, groundwater protection (e.g., leaching to groundwater), terrestrial biota impacts, indoor air impacts, and nuisance concerns. The exclusion of any environmental concerns from consideration must be clearly documented.

22. **Basis for 13304 Order**: The Dischargers (as appropriate) have caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

23. **Cost Recovery**: Pursuant to California Water Code Section 13304, the Dischargers (as appropriate) are hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

24. **CEQA**: This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

25. **Notification:** The Board has notified the Dischargers (as appropriate) and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

26. **Public Hearing**: The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the Dischargers (as appropriate) (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. **PROHIBITIONS**

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. **TASKS**

TANK FARM S

Applicability: Equilon, the Port, Shell, OFFC, and Swissport

1. SITE CHARACTERIZATION REPORT AND FINAL SITE CHARACTERIZATION WORKPLAN – TANK FARM S

COMPLIANCE DATE: FEBRUARY 15, 2002

Equilon, the Port, Shell, OFFC, and Swissport shall submit a report, acceptable to the Executive Officer, which provides the results of investigations proposed in OFFC's August 28, 2001 *Final Site Characterization Work Plan* . The report shall include a well inventory with screen interval data, updated cross sections, tidal study data, pipeline locations, results of a passive soil gas survey, isoconcentration maps showing laboratory analysis data, and conclusions and recommendations. The submittal will also include a work plan which will describe additional characterization efforts necessary to fully delineate the extent and distribution of dissolved phase and free product hydrocarbons and determine the migration status of the plumes (expanding, stable, or receding), and a time schedule for implementation.

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2. INTERIM REMEDIAL ACTION PLAN – TANK FARM S

COMPLIANCE DATE: APRIL 2, 2002

Equilon, the Port, Shell, OFFC, and Swissport shall submit an Interim Remedial Action Plan, acceptable to the Executive Officer, to evaluate remedial action alternatives and recommend one or more alternatives to address the migration of dissolved and free phase petroleum hydrocarbons and MTBE in soil and groundwater in the vicinity of Tank Farm S including the Equilon pipeline "loop" and the stormwater retention pond located southeast of Tank Farm S. Previous efforts have addressed issues that may be incorporated into this submittal (it is noted that Equilon previously submitted an *Interim Remedial Action Plan* dated October 19, 2001 to address MTBE impacts, in compliance with Order No. 99-103). The required Interim Remedial Action Plan must address remediation of previous and ongoing sources (tank or pipeline leaks, if any), shall specify a method to determine the effectiveness of the selected interim remedial action, and shall include a time schedule not to exceed 180 days for implementation.

3. FINAL SITE CHARACTERIZATION REPORT – TANK FARM S

COMPLIANCE DATE: JUNE 15, 2002

Equilon, the Port, Shell, OFFC, and Swissport shall submit a report, acceptable to the Executive Officer, which provides the results of investigations proposed in Task 1 – Site Characterization Report and Final Site Characterization Work Plan. The report shall include boring logs, laboratory analyses (if applicable), updated cross-sections (if applicable), isoconcentration maps showing laboratory analysis data, a site conceptual model, and conclusions and recommendations for further site characterization work, if necessary, and shall include a time schedule not to exceed 120 days for implementation.

4. IMPLEMENTATION OF INTERIM REMEDIAL ACTIONS – TANK FARM S

COMPLIANCE DATE: 180 days after Executive Officer approval of Task 2 Interim Remedial Action Plan

Equilon, the Port, Shell, OFFC, and Swissport shall submit a technical report, acceptable to the Executive Officer, documenting implementation of the interim remedial measures identified in Task 2 – Interim Remedial Action Plan. For ongoing actions, such as soil vapor extraction or groundwater extraction, the report shall document start-up as opposed to completion.

5. FINAL CLEANUP STANDARDS AND RISK ASSESSMENT – TANK FARM S

COMPLIANCE DATE: DECEMBER 15, 2003

Equilon, the Port, Shell, OFFC, and Swissport shall submit a report proposing final clean-up standards for the site. The report shall include an assessment of identified sources, and an evaluation of exposure pathways and risks to both human and ecological receptors for both current and post-cleanup exposures. The report shall consider the screening levels for soil and groundwater identified in Finding 21 and shall address the attainability of background levels of water quality (see Finding 20).

6. PROPOSED FINAL REMEDIAL ACTIONS– TANK FARM S

COMPLIANCE DATE: 120 days after Executive Officer approval of Task 5 Final Cleanup Standards and Risk Assessment

Equilon, the Port, Shell, OFFC, and Swissport shall submit a technical report acceptable to the Executive Officer containing:

a. An evaluation of the installed interim remedial actions
b. A feasibility study evaluating alternative final remedial options and the selected remedial option. The feasibility study shall evaluate the feasibility of achieving background levels of water quality. In the event that it is not feasible to reach background levels of water quality, the highest level of water quality which can reasonably be achieved shall be proposed.
c. The recommended final remedial action
d. Implementation tasks and time schedule to meet cleanup standards

Item 6.b. shall include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items 6.a. and 6.b. shall be consistent with the guidance provided by State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304"). Resolution No. 92-49 requires dischargers to cleanup and abate the effects of discharges in a manner that promotes attainment of either background water quality or the best water quality which is reasonably attainable if background water quality can not be restored. Any cleanup to levels proposed by a discharger that are less than background water quality must consider all requirements stated in Resolution No. 92-49.

TANK FARM C

Applicability: The Port, Chevron

7. WORK PLAN FOR COMPLETION OF REMEDIAL INVESTIGATION – TANK FARM C

COMPLIANCE DATE: APRIL 2, 2002

The Port and Chevron shall submit a Work Plan acceptable to the Executive Officer, describing the proposed approach, methods, and procedures to define the horizontal and vertical extent of petroleum hydrocarbons beneath Tank Farm C. The Work Plan shall summarize all previous soil and groundwater analytical results in tabular format and on isoconcentration maps, provide a groundwater potentiometric surface map including the estimated direction of groundwater flow, geologic cross-sections, a site conceptual model, a description of investigation methods, and a proposed time schedule.

8. COMPLETION OF REMEDIAL INVESTIGATION – TANK FARM C

COMPLIANCE DATE: AUGUST 2, 2002

The Port and Chevron shall submit a technical report, acceptable to the Executive Officer, documenting completion of necessary tasks identified in Task 7 – Work Plan for Completion of Remedial Investigation – Tank Farm C. The technical report shall define the vertical and lateral extent of pollution. The submittal shall also include a work plan and conclusions and recommendations, if necessary. The work plan shall describe additional characterization efforts necessary to fully delineate the extent and distribution of dissolved phase and free product hydrocarbons and determine the migration status of the plumes (expanding, stable, or receding), and provide a time schedule for implementation.

9. SELF-MONITORING PROGRAM (SMP) WORK PLAN – TANK FARM C

COMPLIANCE DATE: 90 days after requested by Executive Officer pending results of Tasks 7 and 8

The Port and Chevron shall submit a work plan, acceptable to the Executive Officer, to monitor the stability of the groundwater plume, if one exists, in Tank Farm C. The SMP Work Plan shall comply with the general requirements of the attached SMP and shall propose the constituents to be monitored, laboratory analyses, specific monitoring locations (wells and, if appropriate, surface water bodies such as the retention pond or adjacent wetlands), and a schedule for sample collection and reporting of results. The SMP Work Plan may propose installation of additional monitoring wells as necessary to determine the extent of and migration status of the plumes (expanding, stable, or receding) and existing or potential impacts of the plumes on sensitive receptors such as adjacent wetlands. The SMP work plan shall also include a copy of the site Sampling and Analysis Plan (SAP). The SAP, at a minimum, must give detailed descriptions of all procedures and equipment used for sample collection and handling in the field.

10. INTERIM REMEDIAL ACTION PLAN – TANK FARM C

COMPLIANCE DATE: 90 days after requested by Executive Officer pending results of investigation required in Tasks 7 and 8

The Port and Chevron shall submit a Work Plan, acceptable to the Executive Officer, to evaluate remedial action alternatives and recommend one or more alternatives to remediate soil and groundwater impacted with hydrocarbon fuel in the vicinity of Tank Farm C. The Work Plan must address remediation of ongoing sources (tank or pipeline leaks, separate phase petroleum hydrocarbons in the subsurface, etc.), shall specify modifications to the Self-Monitoring Program, and shall include a time schedule not to exceed 180 days for implementation.

11. COMPLETION OF INTERIM REMEDIAL ACTIONS – TANK FARM C

COMPLIANCE DATE: 180 days after Executive Officer approval of Task 10

The Port and Chevron shall submit a technical report, acceptable to the Executive Officer, documenting completion of necessary tasks identified in the Task 10 Interim Remedial Action Plan – Tank Farm C. For ongoing actions, such as soil vapor extraction or groundwater extraction, the report shall document start-up as opposed to completion.

12. PROPOSED FINAL REMEDIAL ACTIONS AND CLEANUP STANDARDS – TANK FARM C

COMPLIANCE DATE: 120 days after requested by Executive Officer

The Port and Chevron shall submit a technical report acceptable to the Executive Officer containing:

a. An evaluation of the installed interim remedial actions
b. A feasibility study evaluating alternative final remedial options and the selected remedial option. The feasibility study shall evaluate the feasibility of achieving background levels of water quality. In the event that it is not feasible to reach background levels of water quality, the highest level of water quality which can reasonably be achieved shall be proposed.
c. A risk assessment for current and post-cleanup exposures
d. The recommended final remedial action
e. Recommended cleanup standards
f. Implementation tasks and time schedule to meet cleanup standards

Item 12.b. shall include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items 12.a. and 12.b. shall be consistent with the guidance provided by State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304"). Resolution No. 92-49 requires dischargers to cleanup and abate the effects of discharges in a manner that promotes attainment of either background water quality or the best water quality which is reasonably attainable if background water quality can not be restored. Any cleanup to levels proposed by a discharger that are less than background water quality must consider all requirements stated in Resolution No. 92-49.

Item 12.e. shall consider the screening levels for soil and groundwater identified in Finding 21 and shall address the attainability of background levels of water quality (see Finding 20).

HUMBLE/PS TRADING TANK FARM

Applicability: The Port and PS Trading

13. TANK REMOVAL AND SUBSURFACE INVESTIGATION REPORT – HUMBLE/PS TRADING TANK FARM

COMPLIANCE DATE: MARCH 1, 2002

Based on the results of the tank closure investigation, the Port and PS Trading shall submit a report, acceptable to the Executive Officer, describing the approach, methods, and procedures used to define the extent of residual petroleum hydrocarbons beneath the Humble/PS Trading Tank Farm following removal of the aboveground petroleum storage tanks. The report shall indicate sampling locations, sample collection and analysis methods, tank and line testing results, as well as the approximate locations of removed and existing tanks, buried piping, aboveground piping, and other relevant features.

14. SITE INVESTIGATION WORK PLAN – HUMBLE PS TRADING TANK FARM

COMPLIANCE DATE: 90 days after requested by Executive Officer

The Port and PS Trading shall submit a Work Plan acceptable to the Executive Officer, describing the proposed approach, methods, and procedures to define the horizontal and vertical extent of petroleum hydrocarbons beneath the Humble/PS Trading Tank Farm. The Work Plan shall summarize all previous soil and groundwater analytical results in tabular format and on isoconcentration maps; provide a groundwater potentiometric surface map including the estimated direction of groundwater flow, geologic cross-sections, a site conceptual model, a description of site investigation methods, and a proposed time schedule.

15. COMPLETION OF SITE INVESTIGATION– HUMBLE PS TRADING TANK FARM

COMPLIANCE DATE: 90 days after requested by Executive Officer

The Port and PS Trading shall submit a technical report, acceptable to the Executive Officer, documenting completion of necessary tasks identified in Task 14 – Site Investigation Work Plan – Humble/PS Trading Tank Farm. The technical report shall define the vertical and lateral extent of pollution. The submittal shall also include a work plan and conclusions and recommendations, if necessary. The work plan shall describe additional characterization efforts necessary to fully delineate the extent and distribution of dissolved phase and free product hydrocarbons and determine the migration status of the plumes (expanding, stable, or receding), and provide a time schedule for implementation.

16. SELF-MONITORING PROGRAM (SMP) WORK PLAN - - HUMBLE/PS TRADING TANK FARM

COMPLIANCE DATE: 90 days after requested by Executive Officer

The Port and PS Trading shall submit a work plan, acceptable to the Executive Officer, to monitor the stability of the groundwater plume, if one exists, in the Humble/PS Trading Tank Farm. The SMP Work Plan shall comply with the general requirements of the

attached SMP and shall propose the constituents to be monitored, specific monitoring locations (wells and, if appropriate, surface water bodies such as the retention pond or adjacent wetlands), and a schedule for sample collection and reporting of results. The The SMP work plan shall also include a copy of the site Sampling and Analysis Plan (SAP). The SAP, at a minimum, must give detailed descriptions of all procedures and equipment used for sample collection and handling in the field.

17. INTERIM REMEDIAL ACTION PLAN - - HUMBLE/PS TRADING TANK FARM

COMPLIANCE DATE: 90 days after requested by Executive Officer

The Port and PS Trading shall submit a Work Plan, acceptable to the Executive Officer, to evaluate remedial action alternatives and recommend one or more alternatives to remediate soil and groundwater impacted with hydrocarbon fuel in the vicinity of the Humble/PS Trading Tank Farm. The Work Plan must address remediation of ongoing sources (tank or pipeline leaks, separate phase petroleum hydrocarbons in the subsurface, etc.), shall specify modifications to the Self-Monitoring Program, and shall include a time schedule not to exceed 180 days for implementation.

18. COMPLETION OF INTERIM REMEDIAL ACTIONS - HUMBLE/PS TRADING TANK FARM

COMPLIANCE DATE: 180 days after Executive Officer approval of Task 17 Interim Remedial Action Plan

The Port and PS Trading shall submit a technical report, acceptable to the Executive Officer, documenting completion of necessary tasks identified in the Task 17 Interim Remedial Action Plan – Humble/PS Trading Tank Farm. For ongoing actions, such as soil vapor extraction or groundwater extraction, the report shall document start-up as opposed to completion.

19. PROPOSED FINAL REMEDIAL ACTIONS AND CLEANUP STANDARDS – HUMBLE/PS TRADING TANK FARM

COMPLIANCE DATE: 90 days after requested by Executive Officer

The Port and PS Trading shall submit a technical report acceptable to the Executive Officer containing:

a. An evaluation of the installed interim remedial actions
b. A feasibility study evaluating alternative final remedial options and the selected remedial option. The feasibility study shall evaluate the feasibility of achieving background levels of water quality. In the event that it is not feasible to reach background levels of water quality, the highest level of water quality which can reasonably be achieved shall be proposed.
c. A risk assessment for current and post-cleanup exposures

d. The recommended final remedial action
e. Recommended cleanup standards
f. Implementation tasks and time schedule to meet cleanup standards

Item 19.b. shall include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items 19.a. and 19.b. shall be consistent with the guidance provided by State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304"). Resolution No. 92-49 requires dischargers to cleanup and abate the effects of discharges in a manner that promotes attainment of either background water quality or the best water quality which is reasonably attainable if background water quality can not be restored. Any cleanup to levels proposed by a discharger that are less than background water quality must consider all requirements stated in Resolution No. 92-49.

Item 19.e. shall consider the screening levels for soil and groundwater identified in Finding 19 and shall address the attainability of background levels of water quality (see Finding 20).

C. **PROVISIONS**

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good Operation and Maintenance (O&M)**: The Dischargers (as applicable) shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The Dischargers (as applicable) shall be liable, pursuant to California Water Code Section 13304 and Health and Safety Code Section 25270.9 to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the Dischargers (as applicable) over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the Dischargers (as applicable) shall permit the Board or its authorized representative:

a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

b. Entry upon tank facility premises to conduct periodic inspections.

c. Access to copy any records required to be kept under the requirements of this Order.

d. Inspection of any monitoring or remediation facilities installed in response to this Order.

e. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Dischargers (as applicable).

5. **Self-Monitoring Program**: The Dischargers (as applicable) shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor/Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

    a. City of Oakland Fire Department
    b. County of Alameda Health Services Agency
    c. Port of Oakland

    The Executive Officer may modify this distribution list as needed.

9. **Reporting of Changed Owner or Operator:** The Dischargers (as applicable) shall provide written notice on any changes in site occupancy or ownership associated with the property described in this Order.

10. **Discharges:** If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited, or probably will be discharged in or on any waters of the state, the Discharger shall:

    a. Report such discharge to the Office of Emergency Services at (800) 852-7550

    b. A written report shall be filed with the Regional Board within five working days and shall contain information relative to the following:
        i. The nature of waste or pollutant;
        ii. The quantity involved and the duration of incident;
        iii. The cause of the spill;
        iv. The estimated size of the affected area;
        v. The corrective measures that have been taken or planned, and a schedule of these measures;
        vi. The persons/agencies notified; and
        vii. A copy of the OES notification report.

11. **Periodic SCR Review:** The Board will review this Order periodically and may revise it when necessary. The Dischargers (as applicable) may request revisions and upon review the Executive Officer may recommend that the Board revise these requirements.

12. **Delayed Compliance:** If the Dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the Discharger shall promptly notify the Executive Officer.

13. **Wetlands:** The Dischargers shall notify other public agencies of activities associated with wetlands that might require a permit.

14. This Order supercedes SCR Order No. 99-103. Order No. 99-103 is hereby rescinded.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 23, 2002.

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Loretta K. Barsamian
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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Attachments: Figure 1: Oakland Airport and South Field Tank Farm
Figure 2: South Field Tank Farm
Figure 3: Extent of TPH-Jet A, Tank Farm S
Figure 4: Extent of TPH-G, Tank Farm S
Figure 5: Extent of benzene, Tank Farm S
Figure 6: Extent of MTBE, Tank Farm S
Task Summary Table
Self-Monitoring Program

TASK SUMMARY TABLE

TASK	COMPLIANCE DATE
TANK FARM S:	
1. SITE CHARACTERIZATION REPORT AND FINAL SITE CHARACTERIZATION WORKPLAN	FEBRUARY 15, 2002
2. INTERIM REMEDIAL ACTION PLAN – TANK FARM S	APRIL 2, 2002
3. FINAL SITE CHARACTERIZATION REPORT – TANK FARM S	JUNE 15, 2002
4. IMPLEMENTATION OF INTERIM REMEDIAL ACTIONS – TANK FARM S	180 days after Executive Officer approval of Task 2 – Interim Remedial Action Plan
5. FINAL CLEANUP STANDARDS AND RISK ASSESSMENT – TANK FARM S	DECEMBER 15, 2003
6. PROPOSED FINAL REMEDIAL ACTIONS – TANK FARM S	120 days after Executive Officer approval of Task 5 – Final Cleanup Standards and Risk Assessment
TANK FARM C:	
7. WORK PLAN FOR COMPLETION OF REMEDIAL INVESTIGATION – TANK FARM C	APRIL 2, 2002
8. COMPLETION OF REMEDIAL INVESTIGATION – TANK FARM C	AUGUST 2, 2002
9. SELF-MONITORING PROGRAM (SMP) WORK PLAN – TANK FARM C	90 days after requested by Executive Officer pending results of investigation required in Tasks 7 and 8
10. INTERIM REMEDIAL ACTION PLAN – TANK FARM C	90 days after requested by Executive Officer pending results of investigation required in Tasks 7 and 8
11. COMPLETION OF INTERIM REMEDIAL ACTIONS – TANK FARM C	180 days after Executive Officer approval of Task 10
12. PROPOSED FINAL REMEDIAL ACTIONS AND CLEANUP STANDARDS – TANK FARM C	120 days after requested by Executive Officer
HUMBLE/PS TRADING TANK FARM	
13. TANK REMOVAL AND SUBSURFACE INVESTIGATION REPORT – HUMBLE/PS TRADING TANK FARM	MARCH 1, 2002
14. SITE INVESTIGATION WORK PLAN – HUMBLE/PS TRADING TANK FARM	90 days after requested by Executive Officer
15. COMPLETION OF SITE INVESTIGATION – HUMBLE/PS TRADING TANK FARM	90 days after requested by Executive Officer
16. SELF-MONITORING PROGRAM (SMP) WORK PLAN – HUMBLE/PS TRADING TANK FARM	90 days after requested by Executive Officer

TASK	COMPLIANCE DATE
17 . INTERIM REMEDIAL ACTION PLAN – HUMBLE/PS TRADING TANK FARM	90 days after requested by Executive Officer
18. COMPLETION OF INTERIM REMEDIAL ACTIONS – HUMBLE/PS TRADING TANK FARM	180 days after Executive Officer approval of Task 17 Interim Remedial Action Plan
19. PROPOSED FINAL REMEDIAL ACTIONS AND CLEANUP STANDARDS – HUMBLE/PS TRADING TANK FARM	90 days after requested by Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

CHEVRON PRODUCTS COMPANY
EQUILON ENTERPRISES LLC
FUELING MAINTENANCE CO.
OAKLAND FUEL FACILITIES CORPORATION
PORT OF OAKLAND
PS TRADING, INC.
SHELL OIL COMPANY
SWISSPORT FUELING, INC.

for the property located at

#1 EDWARD WHITE WAY
OAKLAND
ALAMEDA COUNTY

1. **Authority and Purpose**: The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. R2-2002-0013 (site cleanup requirements).

2. **Monitoring**: The Dischargers (as applicable) shall measure groundwater elevations quarterly in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following schedule:

TANK FARM S:

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
MW-1	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE	E-1	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-3	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE	E-2	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-4	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE	E-3	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-5	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE	E-4	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE

MW-6	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE	E-5	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-7	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE	E-6	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-8	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE	TBD*	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE
MW-9	Quarterly	TPH as Jet Fuel TPH as gasoline BTEX, MTBE			

*To be determined from Task B.3 of Board Order R2-2002-0013

TANK FARM C:

Well #	Sampling Frequency	Analyses
TBD*	TBD*	TBD*

*To be determined from Task B.8 of Board Order R2-2002-0013

HUMBLE/PS TRADING TANK FARM:

Well #	Sampling Frequency	Analyses
TBD**	TBD**	TBD**

**To be determined from Task B.15 of Board Order R2-2002-0013

The Dischargers (as applicable) shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The Dischargers (as applicable) may propose changes in the above tables; any proposed changes are subject to Executive Officer approval.

3. **Quarterly Monitoring Reports**: The Dischargers (as applicable) shall submit quarterly monitoring reports to the Board no later than 45 days following the end of the calendar quarter (e.g. report for first quarter of the year due **May 15**, second quarter of the year due **August 15**, third quarter of the year due **November 15**, and fourth quarter due **February 15**. For this Order, the initial quarterly monitoring report shall be due on **February 15, 2002***)*. The reports shall include:

   a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the Dischargers (as applicable)'s principal executive officer or his/her duly authorized representative, and shall include a statement by the

official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map shall be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the fourth quarterly report each year.

c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map shall be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the fourth quarterly report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

d. Groundwater Extraction: If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil vapor extraction), expressed in units of chemical mass per day and mass for the quarter. Historical mass removal results shall be included in the fourth quarterly report each year.

e. Status Report: The quarterly report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following quarter.

4. **Violation Reports**: If the Dischargers (as applicable) violates requirements in the Site Cleanup Requirements, then the Dischargers (as applicable) shall notify the Board office by telephone as soon as practicable once the Dischargers (as applicable) has knowledge of the violation. Board staff may, depending on violation severity, require the Dischargers (as applicable) to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The Dischargers (as applicable) shall notify the Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The Dischargers (as applicable) or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Board upon request.

7. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the Dischargers (as applicable). Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Loretta K. Barsamian, Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on January 23, 2002.

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Loretta K. Barsamian
Executive Officer